

MEMORANDUM RE RIPARIAN RIGHTS ON NIAGARA RIVER

Introduction

This Memo. attempts to set out in a few pages the situation on the Niagara River with respect to the right to divert water for power purposes. The writer has had the following books or documents available:

- (a) "Water-Powers of Canada" issued by Commission of Conservation, 1911;
- (b) Report of W. S. Murray to the National Electric Light Association, published 1922, containing extracts from a report made to the U.S. Secretary of War in 1920 by Generals Beach and Taylor and Colonel Warren, hereinafter referred to as the Taylor Report;
- (c) Copies of all statutes, Orders in Council, etc, referred to;
- (d) Copy of the International Treaty and extracts from American statutes.

No investigation appears to have been made for or on behalf of the Dominion or Ontario Governments in this connection since the investigations of the Commission of Conservation in 1910. For that reason it has been necessary to quote largely from the Taylor Report, which would appear to be a thorough investigation on behalf of the United States Government carried out within the past two years. Copies of this so-called Taylor Report have been applied for to the U. S. Printing Bureau and it is hoped that they will be available in the near future.

The Memorandum is divided into three

parts:

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3. DIVERSION OF WATER AVAILABLE TO THE CHIPPAWA-QUEENSTON DEVELOPMENT	15 to 22
-Being an analysis of the present situation.	

MEMORANDUM RE RIPARIAN RIGHTS ON NIAGARA RIVER

1. WATER POWER LEASES IN GENERAL

Prior to 1898

Previous to the year 1898 there existed no statutory regulations of Ontario governing the lease or disposal of water-powers, and Crown patents for land carried with them the title to all waterpowers situated upon the lands conveyed subject to conditions imposed by law in the interests of navigation, public health and the riparian rights of owners.

Act Respecting Water Powers, 1898

On January 17, 1898, the Ontario Legislature passed "An Act Respecting Waterpowers" under which the Commissioner of Crown Lands was empowered to "reserve from sale any waterpower or privilege on the Crown lands of the Province, and a sufficient areaforbuilding and plant.....roads.....as may be necessary..regulations to be approved by the Lieutenant-Governor in Council."

Regulations of 1907

On January 16th, 1907, the Regulations passed by Order in Council under the Act of 1898 were rescinded and new regulations adopted, vesting the supervisory and discretionary jurisdiction over proposed waterpower developments in The Hydro-Electric Power Commission of Ontario. (Regulations set out in full on page 24 et.seq. of "Water-Powers of Canada 1911")

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Paragraph 5 of the Regulations suggests that the approval of the H. E. P. C. was not intended to be a condition precedent to the issue of a lease or other right to develop a water-power but that "the applicant shall furnish..... plans.....and also..... if required submit to the H.E.P.C. plans.....showing the proposed work.....and such work shall not be proceeded with until the said Power Commission has approved the same."

Powers Granted

Prior to 1898 many water-powers were disposed of without any systematic record having been made of them, and it would be difficult to ascertain their respective present owners. Since 1898 accurate records have been kept and water-power privileges in Ontario have been retained by the Crown as a separate asset or definitely conveyed in the lease or license. Many leases have been granted and afterwards cancelled. As of 1911 there were approximately 25 water-power leases in force (Vide page 35 "Water-Powers of Canada").

Present Policy

The Ontario Government issues its licenses for ~~an~~ provincial waters; the Federal Government for navigable waters. The H. E. P. C. has no control over the issuance of licenses and is only called upon at the discretion of the Government for information and recommendation.

2. NIAGARA RIVER

Prior to 1905

Prior to the year 1905, or until the development of hydro-electric power came to be a household topic in every municipality on both sides of the border, the supply of Niagara's waters for all purposes was regarded as practically inexhaustible. However, private companies had been granted charters giving them the right to develop power on the Niagara River as early as 1853, and about 1905 public opinion began to see the necessity of adequate international control of the Niagara River. The two factors uppermost in the minds of the people were the preservation of the scenic grandeur of Niagara Falls, including the realization of its value as a commercial asset, and the public control of the development of hydro-electric power, rights to which were being granted to private corporations who showed no disposition to sell their power other than at a small fraction under the cost of power produced by steam.

The public demand for the preservation of the scenic beauty of the Falls was aroused by many organizations including such societies as the American Scenic and Historical Society, demanding in both countries the taking of immediate steps to preserve the Falls.

The second factor--the public control of the rights to generate power--was the corollary in Ontario of the

THE NINETEENTH CENTURY

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It is to the year 1800, or until the middle of the nineteenth century, that we must go to find the origin of the scientific movement. At that time, the scientific movement was in its infancy, and it was not until the middle of the nineteenth century that it began to take its true form. The scientific movement was not a sudden discovery, but a gradual process. It was the result of the efforts of many men, who were not only scientists, but also philosophers, historians, and statesmen. The scientific movement was not a purely intellectual movement, but a movement that was deeply concerned with the practical problems of the world. It was a movement that was driven by a sense of duty, and a desire to improve the human condition. The scientific movement was not a movement of the few, but a movement of the many. It was a movement that was rooted in the soil of the people, and that was nourished by the wisdom of the ages. The scientific movement was not a movement of the past, but a movement of the future. It was a movement that was destined to change the world, and to create a new era of human progress.

The public mind was not yet prepared to accept the scientific movement. It was a movement that was too new, and too strange, for the public mind to understand. The public mind was still dominated by the ideas of the past, and it was not until the middle of the nineteenth century that it began to open its eyes to the new world of science. The public mind was not yet ready to accept the scientific movement, but it was not yet too late. The scientific movement was still in its infancy, and it was still possible to guide it towards its true end. The scientific movement was not a movement of the few, but a movement of the many. It was a movement that was rooted in the soil of the people, and that was nourished by the wisdom of the ages. The scientific movement was not a movement of the past, but a movement of the future. It was a movement that was destined to change the world, and to create a new era of human progress.

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agitation of the municipalities covering the past ten years for cheap power and municipal control.

Action of American President in 1906

In his message to Congress on March 27th, 1906, President Roosevelt of the United States recommended that action be taken for the preservation of Niagara Falls. Accordingly Congress adopted a resolution calling upon the U. S. members of the International Waterways Commission to report upon the general conditions obtaining at the Falls and requesting that there be co-operation with the Canadian members of the Commission to the end that proper and adequate steps be taken to prevent further depletion of the waters of the Niagara.

Investigations of Capt. C. W. Kutz

Captain C. W. Kutz of the U. S. Engineers was instructed by the United States Secretary of War to make a thorough investigation of the power situation at Niagara Falls on both sides of the international boundary. Mr. Arthur V. White, on page 59 of "Water-Powers of Canada" states as follows:

"The authorities whose duty it was to make the recommendations regarding the diversion of the water of the river proceeded to work largely upon the basis that no serious hardship could result from withdrawing the charter powers of those who had failed to exercise the same; and that where companies had exercised their powers and had construction works either erected, or under erection, no serious hardship would befall if their use of water was restricted to, but at the same time made sufficient for, all the requirements of the installations which had been completed, or were then in progress of construction."

The joint Commission Report

On May 3rd, 1906, the joint International Waterways Commission, upon the basis of data supplied by Capt. Kutz, reported its conclusion. (See pages 61-2, "Water-Powers of Canada") On the question of diversion * of water for power purposes the Commission recommended:

"That such diversion, exclusive of water required for domestic uses or the service of locks in navigation canals, be limited on the Canadian side to 36,000 cubic feet per second, and on the United States side to 18,500 cubic feet per second (and in addition thereto a diversion for sanitary purposes not to exceed 10,000 cubic feet per second, be authorized for the Chicago Drainage Canal), and that a treaty or legislation be had limiting these diversions to the quantities mentioned."

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The diversions recommended were fixed on the basis of the amount, set out in the report of Capt. Kutz, that would be required by the companies in operation or in course of construction on both sides of the river. The report also points out that the reason Canada should be allowed to divert 17,500 second-feet more than the United States was because the Chicago Drainage Canal would take 10,000 second-feet of water which otherwise would have found its way into the Niagara River. The balance of 7,500 second-feet was explained by the Commission as follows:

"One of the effects of such legislation would be to give to Canada the advantage of diverting 7,500 cubic feet per second more than is diverted in the United States. The advantage is more apparent than real, since the power generated on the Canadian side will to a large extent be transmitted to and used in the United States."

The United States section of the Commission recommended that permits be granted for the importation of power into the United States from the various companies on the Canadian side to a total of 160,000 horse power.

The Burton Act

Although negotiations had been opened between Canada and the United States in 1905 with the object of arranging a treaty dealing with the waters along the international boundary, including Niagara, when the report of the Commission was presented President Roosevelt recommended to Congress that the suggestions of the Commission be enacted into law without waiting for the negotiation of a treaty. Accordingly on June 29th, 1906 the so-called Burton Act was passed and regarded as a temporary measure. *referred 1913*

The Burton Act provides for the issuance by the U.S. Secretary of War of four kinds of permits appertaining to the waters of the Niagara River:

1. Permits to divert water on the American side to an aggregate amount not exceeding 15,600 second-feet; *little water to Niagara*
2. Revocable permits to divert additional water.....to such amount if any as shall not injure the scenic grandeur of Niagara Falls;
3. Permits to transmit electrical power from Canada into the United States to the aggregate of 160,000 horse power.
4. Revocable Permits for the transmission of additional electrical power.....not exceeding 350,000 H.P. in all.

The Burton Act would have expired on June 29th, 1909, but it was extended for a further term of two years, viz: until June 29th, 1911, by a joint resolution.

The Electricity and Fluid Exportation Act

After the Burton Act was passed, Canada on April 27th, 1907, passed the Electricity and Fluid Exportation Act. (6-7 Edward VII, Chap.16 -Canada -) This Act is set out in full on page 391 etc. of volume entitled "The Power Commission Acts, 1917." This Act prohibits the exportation of any electrical power except under Government license and subject to such regulations as may be approved by the Governor in Council. Clause 10 of the Act gives authority to the Governor in Council to impose export duties not exceeding \$10. per annum per horse power, and to remove such duties or vary the amount thereof. The Orders in Council passed under the Act provide for annual licenses and fees.

International Boundary Waters Treaty

On January 11th, 1909, the International Boundary Waters Treaty was signed at Washington. The Treaty is to remain in force for five years dating from the date of exchange of ratifications, and thereafter until terminated by twelve months' written notice given by either of the contracting parties. Ratifications were exchanged at Washington May 5th, 1910, and the treaty was confirmed by the International Boundary Waters Treaty Act. (1-2 Geo. V, Chap. 28, as amended by 4-5 Geo.V, Chap.5 -Canada -). This

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The bottom of the hole was reached on June 29, 1961. The hole was extended for a further 100 feet, and was 475 feet deep, by a joint operation.

The following are the results of the investigation after the bottom had been reached. On June 29, 1961, the investigation was completed. The bottom of the hole was 475 feet deep. The hole was extended for a further 100 feet, and was 475 feet deep, by a joint operation. The investigation was completed on June 29, 1961. The bottom of the hole was 475 feet deep. The hole was extended for a further 100 feet, and was 475 feet deep, by a joint operation.

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Act also provides for the establishment and expenses of The International Joint Commission provided for under the Treaty. This Commission is essentially a continuance of the Joint International Waterways Commission.

With regard to the disposal of waters of the Niagara River, Article 5 of the Treaty states as follows:

"The high contracting parties agree that it is expedient to limit the diversion of waters from the Niagara River, so that the level of Lake Erie and the flow of the stream shall not be appreciably affected. It is the desire of both parties to accomplish this object with the least possible injury to investments which have already been made in the construction of power plants on the United States side of the river under grants of authority from the state of New York, and on the Canadian side of the river under licenses authorized by the Dominion of Canada and the Province of Ontario.

"So long as this treaty shall remain in force no diversion of the Niagara river above the falls from the natural course and stream thereof shall be permitted except for the purposes and to the extent hereinafter provided.

"The United States may authorize and permit the diversion within the state of New York of the water of the said river above the falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of twenty thousand cubic feet of water per second.

"The United Kingdom, by the Dominion of Canada, or the Province of Ontario, may authorize and permit the diversion within the province of Ontario of the waters of said river above the falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of thirty-six thousand cubic feet per second.

"The prohibitions of this article shall not apply to the diversion of water for sanitary or domestic purposes, or for the service of canals for the purposes of navigation."

*side of river
about 1 mile*

*Drainage
canal
william's canal
Daguerre falls*

INSERT MEMORANDUM BY MR. WEGENASTJurisdiction of International Joint Commission

I had a conversation at Ottawa on Monday, 29th May, 1922, with Mr. C. A. Magrath, Chairman of the Canadian Section of the International Joint Commission, in which he said that the International Joint Commission had no functions whatever in connection with the administration of Article 5. He said the Section spoke for itself. He pointed out, moreover, that if the Commission had any executive or interpretative functions it had no way of carrying them into effect because it had no police power and no method of carrying its findings into execution.

ARTICLE 10. -

ARTICLE 11. -

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It is to be noted that the treaty permits the diversion at Niagara Falls, by the United States, of 20,000 second-feet and by Canada of 36,000 second-feet. Reference to page 7 in this memo. will show that the International Waterways Commission report recommended respective diversions of 18,500 and 36,000 second-feet, and that the Burton Act, (page 8 of this memo.) permitted diversion by the United States of 15,600 second-feet.

Recent Investigations by U. S. Government

In 1919 the United States Secretary of War was directed to make a comprehensive investigation of the diversion of water from the Great Lakes and the Niagara River. The report, hereinafter called the Taylor Report, resulting from this investigation was transmitted to the Secretary of War on November 9th, 1920. The investigations were under the direction of Brigadier General H. Taylor and Colonel J. G. Warren. The Taylor Report states that the diversion of waters from the Great Lakes before reaching the power companies at Niagara Falls is as follows:

	Diversion by Canada Cu Ft per Sec.	Diversion by United States Cu Ft per Sec.
Chicago Drainage Canal		8,800
Welland Canal	4,500	
Black Rock Canal		700
New York State Barge Canal		1,000
Total	4,500	10,500

Note: It is contended that the International Boundary Waters Treaty of 1909 contemplated that the United States would divert 16,000 second-feet of water from the great lakes before reaching Niagara Falls than would Canada, hence the treaty provided for a diversion at the Falls by Canada of 36,000 second-feet and by the United States of 20,000 second feet. As a matter of fact the Taylor report of 1920 claims, as set out in the foregoing table, that only 6,000 instead of 16,000 more second-feet is being diverted by the United States above the Falls than by Canada.

The Taylor report, at para. 33, contains a table showing the water diversion from the Niagara River at Niagara Falls in 1917. The following table reproduces the table above referred to and adds a second column giving the diversion in 1920 from statements contained in para. 34 of the Taylor report, as deduced by Mr. Murray:

Water Diversion from Niagara River at
Niagara Falls in Cubic Feet per Second

United States:	<u>1917</u>	<u>1920</u>
Niagara Falls Power Co.-		
Niagara Plant	9,450	
N.F. Hyd. Power & Mfg. Co.	7,840	19,500
Pettibone Cataract Paper Co.	<u>270</u>	<u>270</u>
Total	17,560	19,770
Canada:		
Ontario Power Company	13,300	13,300
Electrical Development Co. Ltd.	12,400	12,400
Canadian Niagara Power Co.	9,600	9,600
International Railway Co.	<u>125</u>	<u>125</u>
Total	35,425	35,425

<u>Surplus Diversion Available By</u> <u>International Treaty of 1909</u>	<u>1917</u>	<u>1920</u>
United States	2,400	230
Canada	2,675	575.

5. DIVERSION OF WATER AVAILABLE TO THE
CHIPPAWA-QUEENSTON DEVELOPMENT

The original contracts between the Queen Victoria Niagara Falls Park Commission and the power companies on the Canadian side limited the amount of water which might be diverted to the capacity of the works permitted, with the exception of the Electrical Development Company, Ltd., which was specifically bound not to produce over 125,000 commercial horse power under its agreement.

By an Order in Council approved June 18th, 1914, the diversion of water allowed to the three large power companies operating on the Canadian side was fixed as follows:

"In the case of the Canadian-Niagara Power Company, a volume of diversion from the Niagara River of the Falls of Niagara not to exceed 8,225 cubic feet of water per second."

"In the case of the Electrical Development Company, Limited, a volume of diversionnot to exceed 9,985 cubic feet of water per second."

"In the case of the Ontario Power Company a volume of diversion.....not to exceed 11,180 cubic feet per second."

Assuming that the power companies took no water in addition to that allowed by the foregoing Order in Council, 6,610 second-feet of water is available for the purposes of the Queenston-Chippawa Development.

8225
9985
11180
29390

U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF RECLAMATION
WATER RESOURCES DIVISION

The original contract between the Bureau

and the State of California was for the purpose

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As a result of this Order in Council the Electrical Development Company, Ltd. brought action against the Province and these actions are still pending. However, in 1917 (7 Geo.V, Chap.22) The Water Powers Regulation Act was amended providing for the appointment of a Royal Commission to investigate the quantity of water being diverted by the companies; the amount of power which each company is entitled to generate; the extent by which the capacity of the works exceeded that to which the company was entitled, and the price and terms upon which the excess power should be delivered to The Hydro-Electric Power Commission of Ontario. On April 25th, 1918, the Royal Commission handed down a decision in part as follows:

"Our conclusion is that it may be taken that the Company is entitled to use 10,512 second-feet of water." (Referring to Elect. Dev. Co.)

The result of this decision is to cut down the number of second-feet of water available for the Chippawa-Queenston Development as based on the Order in Council hereinbefore referred to from 6,610 to 6083.

Third Pipe Line

Still another diversion resulted from the construction in 1917 by the H. E. P. C. of the Third Pipe Line in connection with the Ontario Power Company. This additional diversion, according to the Taylor Report, amounts to 2100 second-feet, and hence again cuts down the amount of water available for Chippawa-

*present time
going to 30 feet
line not involving*

Queenston Development from 6083 to 3983 second-feet, which latter figure is hereafter referred to as the amount available on the Canadian basis.

The Chippawa-Queenston project calls for an ultimate capacity of 650,000 horse power. The Taylor Report estimates that 29.4 horse power can be developed for each second-foot of water diversion on this project. Mr. Gaby has stated that he expects to do somewhat better than 30 horse power per second-foot. On the basis of 30 H.P. per second-foot, the amount of water diversion required for the Queenston-Chippawa Development will be as follows:

<u>Horsepower</u>	<u>Diversion in Cu.Ft.per Sec.</u>
275,000	9,167
540,000	18,000
600,000	20,000

There can be no doubt, assuming that the plants in operation on the Canadian side continue to operate as heretofore, that the Queenston-Chippawa Development will under the Treaty require more water than is available. The question here is to determine the amount which will be required over and above the amount available. If the amount of diversion required by Queenston-Chippawa is deducted from the surplus of 3983 second-feet (being the difference between the water allowed by the International Treaty and the diversion allowed by the Order in Council of 1914 as amended by the decision of the Royal Commission plus the diversion required by the third pipe line) following would be the deficits:

<u>Horsepower Development</u>	<u>Deficit in Diversion</u> <u>Cubic Feet per Second</u>
275,000	5,184
540,000	14,017
600,000	16,017

If, on the other hand, the surplus amount of water available is taken as only 575 second-feet (being the figure given in the Taylor Report) the deficits in water diversion would be still greater, as follows:

<u>Horsepower Development</u>	<u>Deficit in Diversion</u> <u>Cubic Feet per Second</u>
275,000	8,592
540,000	17,425
600,000	19,425

*2070
Calculation
a H.P. is 24 h.r. running
because 20000 H.P.
can be constructed*

In discussing the divergence between the figures as to the amount of water available, i.e. 575 in the Taylor Report and 3,983 reckoned on the Canadian basis, Mr. Murray in his report at page 133 in seeking to justify the figures in the Taylor Report points out that since "the three companies on the Canadian side were never in agreement with the amounts of water allocated to them by the Order in Council of 1914, and these companies always protested that the total capacity permitted for development could not possibly be attained with the water diversion allowed them by this Order....." it is not unlikely that the companies have always and are now exceeding the amounts allowed by the Order in Council, 1914.

Sir Adam Beck's Statements

There can be no doubt that Sir Adam Beck as chairman of The Hydro-Electric Power Commission, and his engineers, were fully cognizant of the facts as to the

available supply of water at the time the Chippawa-Queenston Development was initiated. It must be remembered that the original plan for the project, however, only called for development of 100,000 H.P. which would require approximately 3350 second-feet and that on the Canadian basis approximately 3983 second-feet were available. As the plans were altered and construction proceeded with in contemplation of a full development of 650,000 H.P., the Hydro-Electric Power Commission must have realized that one of three conditions must be fulfilled:

- (a) That the water required would be diverted and that the United States would not be consulted;
- (b) The International treaty would be revised to permit of a diversion sufficient to take care of the Development;
- or (c) The closing or partial closing down of one or more of the plants on the Canadian side to secure sufficient water.

On April 15, 1918, Sir Adam Beck, appearing before the Committee on Water Power of the House of Representatives in Washington, stated:

"Ultimately you will generate your power and use the full head, as we intend doing on the Canadian side. If there is no sentiment to interfere with the use of the water at the Falls, it will be many years before you will be required to scrap these plants, but that sentiment may be renewed after the war, and there may be still a limitation imposed on its use. The 300,000 horse power that we are installing at the present time will not require any more water than we are entitled to under the Treaty."

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Later in the hearing, Sir Adam Beck stated:

"When we bought the Ontario Power Company, one of the objects in buying was we could scrap the plant in ten, fifteen or twenty years when water becomes still more valuable because of its scarcity, and because of curtailment in the use of it, and use this water more efficiently in connection with the scheme that we have in hand."

Speaking as to the additional diversion for war purposes for use on the American side, which was being discussed, Sir Adam also stated:

"Now we maintain that if you increase your allotment, which I think your Government will be quite prepared to agree to, because of the war conditions and necessary demands for water, we will also ask that our allotment be increased by 10,000 second-feet."

The additional diversion then under discussion was not allowed by the United States Government, and to date the International Treaty of 1910 is in force.

Referring again to the three conditions, at least one of which must be fulfilled in order that sufficient water should be available for the Chippawa-Queenston Development: condition "a" which would contemplate the operation of the plant and taking of such amount of water as might be required without consulting the United States, is probably dangerous and impossible in view of the Taylor Report of 1920 to the Secretary of War. Condition "b" contemplates a new International Treaty. General Taylor, in para. 67 of his report, recommended:

"That the limits of diversion from the Niagara River above the Falls, which the high contracting parties may permit within their respective jurisdiction, be raised from 20,000 cubic feet of water per second on the United States side to 40,000 cubic feet of water per second and from 36,000 cubic feet of water per second on the Canadian side to 40,000 cubic feet of water per second."

In view of this recommendation and of the situation in which the Hydro Electric Power Commission finds itself, it is fair to assume that the International Treaty will be modified. It must not be forgotten, however, that there will be required for the operation of the Chippawa-Queenston Development on the basis of 30 H.P. per second-foot 9,167 second-feet for the development of 275,000 H.P.; 18,000 second-feet for 540,000 H.P., and 20,000 second-feet for 600,000 H.P., which latter figure is exactly five times the increased diversion recommended by the Taylor Report.

To put it shortly, the Taylor Report estimates that there is at present a surplus of 575 second-feet available; the Canadian basis estimates the surplus at 3,983 second-feet; the Taylor Report recommends increased diversion 4,000 second-feet, and the Chippawa-Queenston Development will require from 9,167 second-feet to 20,000 second-feet.

If we treat condition "A" as impossible of fulfillment and condition "b" as possible of only partial fulfillment, we must fall back on condition "c2, namely,

the closing or partial closing down of one or more of the plants on the Canadian side to make sufficient water available.

This condition has evidently been in contemplation by Sir Adam Beck in view of his statement at Washington on April 15th, 1918, quoted above; moreover, in view of the following table as set out in para. 36 of the Taylor Report which states the gross heads and outputs per second-foot of the several Canadian plants, it would appear to be more economical than under-operating the Chippawa-Queenston plant because the operation of the Chippawa-Queenston Development would obviously result in a lower unit cost than is possible with the smaller sized plants.

	<u>Power Output</u>	<u>Gross Head</u>	<u>Horsepower per Sec.-Ft.</u>
Canadian-Niagara Power Company	100,000	173	10.4
Ontario Power Co. (Hydro)	163,000	215	14.6
Electrical Development Company, Ltd.	125,000	183	10.1
Queenston-Chippawa Development	294,000	313	29.4

The extent to which one or more plants would have to be wholly or partially shut down will depend

- (a) on the difference between the amount required to operate Chippawa from time to time and the surplus available as set out above (see page of this memo.); and
- (b) the number of second-feet of water at present being used by the existing plants, which is reckoned by the Taylor Report as 35,425 and on the Canadian basis as 32,017 second-feet.

*used later
as a spare
fund - surplus*
*3122 60
all 55. 60
245, 600*

